

**SECTION 08 33 00**  
**COILING DOORS**

**PART 1 - GENERAL**

**1.1 DESCRIPTION**

- A. This section specifies insulated and non-insulated coiling doors of sizes shown, complete as specified.

**1.2 RELATED WORK**

- A. Section 01 81 13, SUSTAINABLE DESIGN REQUIREMENTS for additional LEED requirements.
- B. Lock cylinders for cylindrical locks: Section 08 71 00, DOOR HARDWARE.
- C. Finishes: Section 09 60 00, SCHEDULE OF FINISHES.

**1.3 MANUFACTURER'S AND INSTALLER'S QUALIFICATIONS**

- A. Coiling doors shall be products of manufacturers regularly engaged in manufacturing items of type specified.
- B. Install items under direct supervision of manufacturer's representative or trained personnel.

**1.4 FIRE DOOR REQUIREMENTS**

- A. Where fire doors exceed the size for which testing and labeling is available, submit certificates stating that the doors and hardware is identical in design, materials, and construction to a door that has been tested and meets the requirements for the class indicated.

**1.5 SUBMITTALS**

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Shop Drawings:
  - 1. Each type of door showing details of construction, accessories and hardware and mechanical items supporting brackets for safety devices.
- C. Manufacturer's Literature and Data:
  - 1. Brochures or catalog cuts, each type door or grille.
  - 2. Manufacturer's installation procedures and instructions.
  - 3. Maintenance instructions, parts lists.
- D. Certificates:
  - 1. Attesting doors, anchors and hardware will withstand the horizontal loads specified.

2. Attesting oversize fire doors and hardware are identical in design, material, and construction to doors that meet the requirements for the class specified.

E. LEED Submittals:

1. Credit MR 5.1 & 5.2: For products manufactured within 500 miles of project site *and* whose raw materials are extracted, harvested or recovered, within 500 miles of the project site, documentation indicating the location and distance of material manufacturer and point of extraction, harvest, or recovery for each raw material from the Project site.
  - a. Include statement indicating cost for each regional material and the fraction by weight that is considered regional

## 1.6 APPLICABLE PUBLICATIONS

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only.
- B. American Society for Testing and Materials (ASTM):

|                 |  |
|-----------------|--|
| A36/A36M-05     | Structural Steel   |
| A167-99 (R2004) | Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet and Strip                          |
| A653/A653M-07   | Steel Sheet, Zinc-Coated (Galvanized) Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process |
- C. National Fire Protection Association (NFPA):

|       |                             |
|-------|-----------------------------|
| 80-06 | Fire Doors and Fire Windows |
|-------|-----------------------------|
- D. National Association of Architectural Metal Manufacturers (NAAMM):

|                |                       |
|----------------|-----------------------|
| AMP 500 Series | Metal Finishes Manual |
|----------------|-----------------------|
- E. Underwriters Laboratories, Inc. (UL):

|      |                           |
|------|---------------------------|
| 2007 | Fire Resistance Directory |
|------|---------------------------|

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Basis-Of-Design Product: Subject to compliance with requirements, provide Alpine Overhead Doors, Inc.; Fire-Tite-Rolling Door or comparable product by one of the following:
  1. Acme Rolling Doors.
  2. Cookson Company.
  3. Cornell Iron Works, Inc.
  4. Mahon Door Corporation.

5. McKeon Rolling Steel Door Company, Inc.
6. Overhead Door Corporation.
7. Raynor.
8. Wayne-Dalton Corp.
9. Windsor Door.

## **2.2 MATERIAL**

- A. Steel: A653 for forming operation. ASTM A36 for structural sections.
- B. Bituminous Coating: Manufacturer's standard.

## **2.3 DESIGN REQUIREMENTS**

- A. Coiling doors shall be spring counter balanced, overhead coiling type, inside face mounted with guides at jambs set back a sufficient distance to provide a clear opening when door is in open position.
- B. Doors, hardware, and anchors shall be designed to withstand a horizontal or wind pressure of 958 Pa (20 psf) of door area without damage.
- C. Fire rated doors shall conform to the requirements specified herein and to NFPA 80 for the class indicated. Doors shall bear Underwriters Laboratories, Inc. label indicating the applicable fire rating.
- D. Where doors in excess of 7.4 m<sup>2</sup> (80 sf) are indicated to be manually operated, provision shall be made in the design and construction that will permit future installation of electric-power operation.

## **2.4 FABRICATION**

- A. Curtains:
  1. Form of interlocking slats of galvanized steel of shapes standard with the manufacturer, except that slats for exterior doors shall be flat type.
  2. Thickness of slats shall be as required to resist loads specified except not less than the following:
    - a. For doors less than 4500 mm (15 feet) wide: 0.75 mm (0.0299 inch).
    - b. For doors from 4530 mm (15 feet 1 inch) to 6300 mm (21 feet wide): 0.90 mm (0.0359 inch).
    - c. For doors wider than 6330 mm (21 feet 1 inch): 1.20 mm (0.0478 inch).
    - d. For insulated doors:
      - 1) 23 mm (15/16 inch) depth.
      - 2) Double wall slats injected with polyurethane foam.
      - 3) Thermal Value: RSI/m = 4.8 (R = 6.25) minimum.

## B. Endlocks and Windlocks:

1. Manufacturer's stock design of galvanized malleable iron or galvanized steel or stamped cadmium steel for doors.
2. The ends of each slat for exterior doors and each alternate slat for grilles and interior doors shall have endlocks.
3. Doors shall have windlocks at ends of at least every sixth slat. Windlocks shall prevent curtain from leaving guide because of deflection from wind pressure or other forces.

## C. Bottom Bar:

1. Two angles of equal weight, one on each side, standard extruded aluminum members not less than 3 mm (0.125 inch) thick.
2. Bottom bar designed to receive weather-stripping and safety device, and be securely fastened to bottom of curtain or grille.

## D. Barrel and Spring Counterbalance:

1. Curtain shall coil on a barrel supported at end of opening on brackets and be balanced by helical springs.
2. Barrel fabricated of steel pipe or commercial welded steel tubing of proper diameter and thickness for the size of curtain, to limit deflection with curtain rolled up, not to exceed 1 in 400 (0.03 inch per foot) of span.
3. Close ends of barrel with cast iron plugs, machined to fit the opening.
4. Within the barrel, install an oil-tempered, helical, counter balancing steel spring, capable of producing sufficient torque to assure easy operation of the door curtain from any position.
5. At least 80 percent of the door weight shall be counter balanced at any position.
6. Spring-tension shall be adjustable from outside of bracket without removing the hood or motor operator.

## E. Brackets:

1. Steel plate designed to form end closure and support for hood and the end of the barrel assembly.
2. End of barrel or shaft shall screw into bracket hubs fabricated of cast iron or steel.
3. Equip bracket hubs or barrel plugs with prelubricated ball bearings, shielded or sealed.

## F. Hoods:

1. Galvanized steel, not less than 0.6 mm (0.0239 inch) thick.

2. Form hood to fit contour of end brackets.
3. Reinforce at top and bottom edges with rolled beads, rods or angles. Hoods more than 3600 mm (12 feet) in length shall have intermediate supporting brackets.
4. Fasten to brackets with screws or bolts and provide for attachment to wall with bolts.
5. Provide a weather baffle at the lintel or inside the hood of each exterior door to minimize seepage of air through the hood enclosure.

G. Guides:

1. Manufacturer's standard formed sections or angles of aluminum.
  - a. Aluminum sections not less than 5 mm (0.1875 inch) thick.
2. Form a channel pocket of sufficient depth to retain the curtain in place under the horizontal pressure specified, and prevent ends of curtain from slipping out of guide slots.
3. Top sections flared for smooth entry of curtain to vertical sections that will facilitate entry of curtain.
4. Provide stops to limit curtain travel above top of guides.
5. Provide guide of aluminum with replaceable wear strips to prevent metal to metal contact.
6. Mounting brackets shall provide closure between guides and jambs.

H. Weather-stripping:

1. At exterior doors provide replaceable sweep type continuous vinyl or neoprene weather seals on guides and across head on exterior to seal against wind infiltration.

I. Locking:

1. Provide hasps for pad locks furnished under Section, 08 71 00 DOOR HARDWARE.

## 2.5 FIRE DOORS

- A. B-labeled fire doors shall be complete with hardware, accessories, and automatic closing device as required by NFPA 80.
- B. Equip fire doors with an automatic closing mechanism actuated by fusible links to release at 54°C (130°F).
- C. Doors shall be forced into a closed position by an auxiliary spring in the barrel which is inoperative during normal operation and when activated will not affect the adjustment of the counterbalance spring. The auxiliary spring shall exert pressure on the curtain until the release device is reset. Door shall come to rest on the floor without impact.

- D. Control descent of curtain by an oscillating governor.
- E. Provide handles for push up operation.

## **2.6 FINISHES**

- A. Steel and Galvanized-Steel Finishes:
  - 1. Clean surfaces of steel free from scale, rust, oil and grease, and then apply a light colored shop prime paint after fabrication.
  - 2. Galvanized steel: Apply a phosphate treatment and a corrosion inhibitive primer.
  - 3. Powder-Coat Finish: Manufacturer's standard powder-coat finish consisting of prime coat and thermosetting topcoat. Comply with coating manufacturer's written instructions for cleaning, pretreatment, application, and minimum dry film thickness.
  - 4. Color: Refer to Section 09 06 00, SCHEDULE OF FINISHES.

## **PART 3 - EXECUTION**

### **3.1 INSTALLATION**

- A. Install insulated and non-insulated, fire-rated and non-fire-rated doors in accordance with approved shop drawings and manufacturer's instructions.
- B. Locate anchors and inserts for guides, brackets, motors, switches, hardware, and other accessories accurately.
- C. Securely attach guides to adjoining construction with not less than 9 mm (3/8 inch) diameter bolts, near each end and spaced not over 600 mm (24 inches) apart.

### **3.2 REPAIR**

- A. Repair prime painted zinc-coated surfaces and bare zinc-coated surfaces that are damaged by the application of galvanizing repair compound. Spot prime all damaged shop prime painted surfaces including repaired prime painted zinc-coated surfaces.
- B. Coiling Doors shall be lubricated, properly adjusted, and demonstrated to operate freely.

### **3.3 INSPECTION**

- A. Upon completion, doors shall be weathertight and doors shall be free from warp, twist, or distortion.

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